UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,173	04/16/2004	Kanji Kirmoto	SIC-04-021	9874

29863 7590 04/30/2008

DELAND LAW OFFICE
P.O. BOX 69
KLAMATH RIVER, CA 96050-0069

EXAMINER	
WILLIAMS, THOMAS J	

ART UNIT	PAPER NUMBER
3683	

MAIL DATE	DELIVERY MODE
04/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/826,173
Filing Date: April 16, 2004
Appellant(s): KIRMOTO ET AL.

James A. Deland
For Appellant

EXAMINER'S ANSWER

This supplemental examiner's answer replaces the examiner's answer mailed April 9, 2008, and is in response to the appeal brief filed March 20, 2008 appealing from the Office action mailed September 28, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,201,402	Mott	4-1993
5,647,475	Le Deit et al.	12-1997
5,960,914	Isai	10-1999
6,148,964	Huang	11-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Reissue Applications

Claims 37-60 and 69-74 are rejected under 35 U.S.C. 251 as being improperly broadened in a reissue application made and sworn to by the assignee and not the patentee. A claim is broader in scope than the original claims if it contains within its scope any conceivable product or process which would have infringed the original patent. A claim is broadened if it is broader in any one respect even though it may be narrower in other respects.

Claims 37 and 72-74 omit limitations pertaining to the interior of the actuating mechanism, specifically "an input cam movably mounted within the caliper housing to move in a rotational direction about a longitudinal axis, but not in an axial direction, said input cam having a first camming surface with an axially extending guide member non-movably fixed thereto at said longitudinal axis, and an output cam movably mounted within said caliper housing to move in the axial direction in response to rotation of said input cam, but not in the rotational direction, said output cam having a second camming surface with an axially extending bore, said guide member being at least partially

disposed within said bore to ensure smooth relative movement between said input and output cams", added during prosecution of 09/531,570 (US 6,557,671) in the amendment dated November 8, 2002 to overcome the outstanding rejection in view of Kawaguchi (US 3,789,959) mailed July 11, 2002.

The above limitations have been replaced with new limitations directed to an exterior portion of the actuating arm, specifically "wherein the actuated mechanism comprises an elongated actuating arm rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position towards the braking position; and wherein the actuating arm has a curved surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position".

The omitted limitations relate to previously surrendered subject matter and are directed to the input cam and the output cam and the specifics thereof, whereas the replacement limitations are directed to the actuating arm. The replacement limitations are not related to the omitted limitations, therefore a recapture rejection exists.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 37-43, 47-53 and 69-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,647,475 to Le Deit et al. in view of US 4,582,177 to Carre et al. and in view of US 6,148,964 to Huang.

Re-claims 37-40, 54 and 74, Le Deit et al. teach a cable disc brake capable for use on a bicycle, comprising: a caliper housing 12/46/48, a cable support 44 has an opening in element 42 for guiding a cable 38 therethrough; the cable support extends from a surface of the caliper housing (see figure 1) and is not adjustable (in any direction, as recited in claim 37) relative to the surface of the caliper housing (see figure 6 and column 5 lines 9-47, wherein Le Deit et al. teach the bracket as taking a single position relative to the housing that is not adjustable in any direction, since this single position is the optimum position); a first friction member 20a moves between a release position and a

braking position; a second friction member 20b is coupled to the housing; an actuating mechanism 10 is moveable coupled to the caliper housing and moves the first friction member in an axial direction from the release position to the braking position; the actuating mechanism comprises an elongated actuation arm 32 rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position to the braking position. However, Le Deit et al. fail to teach the actuating arm having a curved guide surface with a first portion coincident with a cable clamp and a second portion extending from the first portion toward the cable support 44, wherein the second portion is defined by a protuberance (*claim 38*) that supports the cable.

Carre et al. teach a cable disc actuating system comprising an actuating arm 50 provided with a curved guide surface with a first portion coincident with a cable clamp 58 and a second portion extending from the first portion, wherein the second portion is a projection defined by a protuberance (see figure 6, note the slight protuberance at the cable exit portion of the arm) that supports the cable (*claim 38*); the projection has a radially outer portion and a radially outer portion (*claim 39*); the projection is disposed at the radially outermost portion of the actuating arm (*claim 40*); the cable, once coupled to the cable clamp, approaches the guide surface from the opening in the cable support in substantially a straight line (*claim 54*, due the curved guide surface the cable extending from the cable support will extend in a straight line as shown by Carre et al.). Furthermore, Carre et al. teach that the curved guide surface structure of the actuation arm provides for an increase in torque exerted during rotation, see column 4 lines 61-64,

thereby improving braking response. It would have been obvious to one of ordinary skill in the art to have replaced the actuating arm of Le Deit et al. with the actuating arm taught by Carre et al., thereby improving the overall brake performance and response of the cable actuated brake mechanism.

In addition Le Deit et al. fail to specify the use of a mounting bracket, or the specifics of how the brake assembly is supported relative to the vehicle. Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanically actuated cable disc brake assembly. It would have been obvious to one of ordinary skill in the art when having utilized the disc brake assembly of Le Deit et al. on a bicycle to have provided the bicycle with the type of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Re-claims 41 and 42, see the spring supported around the cable in figure 2.

Re-claim 47, the opening in the cable support 44 is provided with cable adjusting bolts or elements.

Re-claims 48 and 49, see column 2 lines 37-40.

Re-claims 50-53, Le Deit et al. as modified by Carre et al. fail to teach the specifics of the disc brake when mounted to a front fork of a bicycle. Huang teaches a typical manner by which to mount a mechanical disc brake to a front fork of a bicycle. The caliper housing includes a first mounting flange with a first opening 317, a second mounting flange with a second opening 317, the first opening is above a rotational axis, the second opening is below the rotational axis, the cable support is disposed about the

rotational axis, the guide surface (as taught in Carre et al.) would be rearwardly of the rotational axis, and the cable support is rearwardly of the rotational axis. It would have been obvious to one of ordinary skill to have utilized the teachings of Huang when having mounted the brake apparatus of Le Deit et al. as modified by Carre et al., on a front fork of a bicycle, as the mounting structure of Huang is known in the art as a common means by which one could mount a brake assembly to a bicycle to yield predictable results, which is an easy method by which one could mount a brake assembly to a bicycle.

Re-claim 69, the cable support 44 is immobilized (see column 3 lines 39-43) with respect to the caliper housing 12 and as such is broadly interpreted as being one with the caliper housing.

Re-claim 70, the cable support comprises an elongated member.

Re-claim 71, once the support member is immobilized with respect to the housing the elongated member, that forms the opening, is immovable relative to the surface of the caliper housing.

Re-claim 72, Le Deit et al. teach a cable disc brake capable for use on a bicycle, comprising: a caliper housing 12/46/48, a cable support 44 has an opening in element 42 for guiding a cable 38 therethrough; the cable support extends from a surface of the caliper housing (see figure 1) and is not adjustable at any time relative to the surface of the caliper housing (see figure 6 and column 5 lines 9-47, wherein Le Deit et al. teach the bracket as taking a single position relative to the housing that is not adjustable at any time after assembly, the prior art is considered by the examiner as assembled and not at

various points in time before final assembly); a first friction member 20a moves between a release position and a braking position; a second friction member 20b is coupled to the housing; an actuating mechanism 10 is moveable coupled to the caliper housing and moves the first friction member in an axial direction from the release position to the braking position; the actuating mechanism comprises an elongated actuation arm 32 rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position to the braking position. However, Le Deit et al. fail to teach the actuating arm having a curved guide surface with a first portion coincident with a cable clamp and a second portion extending from the first portion toward the cable support 44, wherein the second portion is defined by a protuberance (*claim 38*) that supports the cable.

Carre et al. teach a cable disc actuating system comprising an actuating arm 50 provided with a curved guide surface with a first portion coincident with a cable clamp 58 and a second portion extending from the first portion, wherein the second portion is a projection defined by a protuberance (see figure 6, note the slight protuberance at the cable exit portion of the arm) that supports the cable (*claim 38*); the projection has a radially outer portion and a radially outer portion (*claim 39*); the projection is disposed at the radially outermost portion of the actuating arm (*claim 40*); the cable, once coupled to the cable clamp, approaches the guide surface from the opening in the cable support in substantially a straight line (*claim 54*, due the curved guide surface the cable extending from the cable support will extend in a straight line as shown by Carre et al.). Furthermore, Carre et al. teach that the curved guide surface structure of the actuation

arm provides for an increase in torque exerted during rotation, see column 4 lines 61-64, thereby improving braking response. It would have been obvious to one of ordinary skill in the art to have replaced the actuating arm of Le Deit et al. with the actuating arm taught by Carre et al., thereby improving the overall brake performance and response of the cable actuated brake mechanism.

In addition Le Deit et al. fail to specify the use of a mounting bracket, or the specifics of how the brake assembly is supported relative to the vehicle. Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanically actuated cable disc brake assembly. It would have been obvious to one of ordinary skill in the art when having utilized the disc brake assembly of Le Deit et al. on a bicycle to have provided the bicycle with the type of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Re-claim 73, Le Deit et al. teach a cable disc brake capable for use on a bicycle, comprising: a caliper housing 12/46/48, a cable support 44 has an opening in element 42 for guiding a cable 38 therethrough; the cable support extends from a surface of the caliper housing (see figure 1) and is not removable relative to the surface of the caliper housing (see figure 6 and column 5 lines 9-47, wherein Le Deit et al. teach the bracket as taking a single position relative to the housing and is interpreted as being not removable, since this step need never be performed once assembled); a first friction member 20a moves between a release position and a braking position; a second friction member 20b is coupled to the housing; an actuating mechanism 10 is moveable coupled to the caliper

housing and moves the first friction member in an axial direction from the release position to the braking position; the actuating mechanism comprises an elongated actuation arm 32 rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position to the braking position. However, Le Deit et al. fail to teach the actuating arm having a curved guide surface with a first portion coincident with a cable clamp and a second portion extending from the first portion toward the cable support 44, wherein the second portion is defined by a protuberance (*claim 38*) that supports the cable.

Carre et al. teach a cable disc actuating system comprising an actuating arm 50 provided with a curved guide surface with a first portion coincident with a cable clamp 58 and a second portion extending from the first portion, wherein the second portion is a projection defined by a protuberance (see figure 6, note the slight protuberance at the cable exit portion of the arm) that supports the cable (*claim 38*); the projection has a radially outer portion and a radially outer portion (*claim 39*); the projection is disposed at the radially outermost portion of the actuating arm (*claim 40*); the cable, once coupled to the cable clamp, approaches the guide surface from the opening in the cable support in substantially a straight line (*claim 54*, due the curved guide surface the cable extending from the cable support will extend in a straight line as shown by Carre et al.). Furthermore, Carre et al. teach that the curved guide surface structure of the actuation arm provides for an increase in torque exerted during rotation, see column 4 lines 61-64, thereby improving braking response. It would have been obvious to one of ordinary skill in the art to have replaced the actuating arm of Le Deit et al. with the actuating arm

taught by Carre et al., thereby improving the overall brake performance and response of the cable actuated brake mechanism.

In addition Le Deit et al. fail to specify the use of a mounting bracket, or the specifics of how the brake assembly is supported relative to the vehicle. Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanically actuated cable disc brake assembly. It would have been obvious to one of ordinary skill in the art when having utilized the disc brake assembly of Le Deit et al. on a bicycle to have provided the bicycle with the type of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Claims 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. in view of Carre et al. and Huang as applied to claim 37 above, and further in view of US 5,960,914 to Isai.

Re-claims 55, 56, 58 and 59, Le Deit et al. as modified by Carre et al. and Huang fail to teach a torsion spring. Isai teaches a torsion spring 131 used for biasing the actuating arm back to a non-actuated position or rest position. The torsion spring is positioned between the caliper and the actuating arm, with a first end adjustably connected to the caliper and a second end directly connected to the actuating arm. It would have been obvious to one of ordinary skill in the art to have provided the brake apparatus of Le Deit et al. with a return biasing member such as a torsion spring as taught by Isai, thus providing an inexpensive means by which to effectively release the brake.

The torsion spring of Isai would have eliminated the need for spring surrounding the cable in Le Deit et al., as each is considered functionally equivalent and would yield predictable results, which is a release function of the brake.

Re-claim 57, the torsion spring as taught by Isai is interpreted as being adjustably coupled to the caliper housing and the arm, since during assembly the torsion spring would experience some adjustment.

Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. as modified by Carre et al., Huang and Isai as applied to claim 58 above, and further in view of US 5,201,402 to Mott.

Le Deit et al. as modified fails to teach a plurality of holes for receiving the torsion spring, wherein the holes allow for adjustment of the torsion spring. Mott teaches the use of a plurality of holes for receiving an end of a torsion spring. The various positions of the holes offer different biasing forces. It would have been obvious to one of ordinary skill in the art to have provided the caliper housing, and even the actuating arm of Le Deit et al. with a plurality of holes for receiving an end of the torsion spring as taught by Mott, this would have provided an easy means by which to vary the biasing force of the spring.

(10) Response to Argument

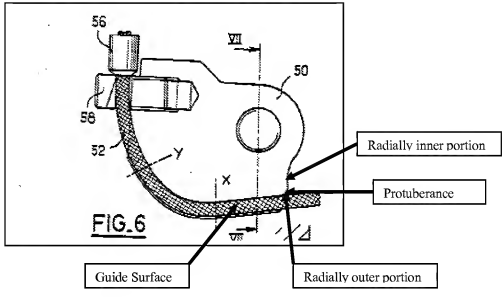
With regards to the recapture rejection of claims 37-60 and 69-74. As stated in the above rejection, the newly added limitations pertaining to the actuating arm are not

related to the canceled subject matter pertaining to the input cam and output cam added during prosecution to overcome the rejection in view of Kawaguchi. The amended claims and remarks filed November 8, 2002 (in Patent 6,557,651) discuss the importance of the cam arrangement and further distinguish this arrangement over the prior art of record. In particular, the output cam having a second camming surface with an axially extending bore and its cooperation with the guide member, added November 8, 2002 has been eliminated. In addition, the non-rotation feature of at least one of the cam elements and the rotation feature of the other cam element, added in the amendment dated August 9, 2001 has been eliminated. If it has been determined that any reissue claim entirely omits any limitation that was added/argued during the original prosecution to overcome an art rejection, and even if the reissue claim includes other limitations rendering the reissue claim narrower than the patent claim in other aspects, then the reissue claims must be rejected under impermissible recapture. *See Pannu v. Storz Instruments Inc., 258 F.3d 1366, 59 USPQ2d 1597 (Fed. Cir. 2001).* In addition, and as pointed out by the applicant, the newly added subject matter is distinct from the cancelled subject matter, see page 7 paragraph 5 of the appeal brief. This provides further support for the recapture rejection, wherein if a limitation added/argued to overcome an art rejection during the original prosecution is replaced in the reissue claims by another limitation that is not related to the added/argued limitation, then recapture exists, even where the replacement limitation defines the claim(s) over the prior art. *See Pannu.* As such the examiner believes the recapture rejection should be sustained.

With regards to claims 37 and 74, as stated previously by the examiner, the position of the cable support 44 in Le Deit et al. as illustrated in figure 6 (an alternate embodiment with respect to figures 1-5) is not adjustable, or adjustable in any direction. The index elements, or bump formations 68' and 70', restrict to a single position that the cable support 44 can be positioned with respect to the caliper housing 46. As such the cable support cannot be adjusted to any other position with respect to the cable housing. It is unclear to the examiner what the relevance is regarding the definitions regarding "removably attached" and "removably secured". The claim merely requires the cable support to be not adjustable, or not adjustable in any direction relative to the surface of the caliper housing. As clearly pointed out by the examiner, bumps 68' and 70', would prevent anyone from repositioning the cable support in any direction relative to the caliper housing. The aforementioned index elements, or bumps, function as keys, in that they lock the cable support to the caliper housing to a single position. The characterization presented by the applicant in the last paragraph of the remarks for claim 37 (see page 14) is pure speculation. In fact none of what the applicant states need occur.

With regards to claims 38-40, note the projection, or elongated protuberance associated with guide surface and the associated inner and outer surfaces (see annotated figure below). It would appear that the surface does in fact slightly bulge outward at a portion of the guide surface interpreted as a second portion of the guide surface. In addition it is unclear to the examiner what degree of extension, projection, or bulging from the guide surface one must have to constitute the protuberance as recited by the applicant. The remarks filed April 26, 2007 merely mention a protuberance as an area

that bulges out beyond the surrounding surface. As such the degree of the bulge is not defined. Therefore, it is the opinion of the examiner that the slight bulge illustrated in Carre et al. does in fact constitute a protuberance.



With regards to claim 43, turning to figure 6 in Le Deit et al. attention is drawn to a bushing element positioned between a spring end and limit stop 42. The length of this element will determine in part the biasing force applied between the caliper housing and the actuating arm, by either contracting or expanding the rest length of the spring.

With regards to claim 47, Carre et al. clearly teaches a cable adjusting bolt 46, which is clearly capable of being incorporated into the assembly of Le Deit et al., as this is a common means by which to provide the user a method by which to adjust the cable tension.

With regards to claim 69, it is the opinion of the examiner that once the cable support is assembled and attached to the caliper housing that the two elements are interpreted as one, or one piece.

With regards to claim 72, the examiner is applying the Le Deit et al. reference as an assembled product and is not concerned with the steps along the assembly process, as this would constitute a method of assembly. As such, once the product is assembled in the form as illustrated in figure 6 the cable support is not adjustable at any time relative to the caliper housing. This position also provides supports for the rejection of claim 37.

With regards to claim 73, it is unclear to the examiner what exactly the term "not removable" is intended to imply. Clearly the cable support of the instant invention can be removed from the caliper housing by simply breaking it off from the caliper housing. As such it is removable from the caliper housing. Therefore, unless an outside force is applied to the cable support of either the instant invention or the assembly of Le Diet et al. both are broadly interpreted as being not removable from the caliper housing.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Thomas J. Williams

/Thomas J. Williams/

Primary Examiner, Art Unit 3683

Conferees:

Thomas J. Williams /T.J.W./

Robert Siconolfi /RS/

Meredith Petravick /mcp/